

Abstract of the Disclosure

The present invention is related to a method for forming a hydrogen barrier layer capable of protecting a bottom
5 structure from damages occurring due to hydrogen produced during a semiconductor device fabrication. The method includes the steps of: forming a hafnium vanadium oxide (HfVO_x) layer on a substrate structure providing a predetermined semiconductor device structure, the HfVO_x layer
10 being used as a hydrogen diffusion barrier layer; and forming an insulation layer on the HfVO_x layer.